

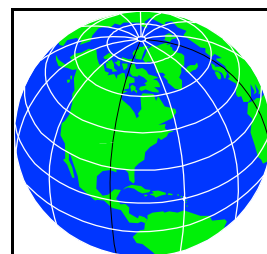


Spotlight



DOT's Climate Change Task Force, Secretary of Transportation Rodney E. Slater recently announced the formation of a DOT Center for Climate Change and Environmental Forecasting (CCCEF) intended "to develop win-win solutions for our transportation partners that will help to reduce greenhouse gases." The NSTC Team, supported by

Volpe Center staff, is made up of federal agencies with an interest in transportation and sustainability, including DOT's Office of the Secretary and the DOT modal administrations, the Environmental Protection Agency, the Department of Energy, the Department of Housing and Urban Development, and the Centers for Disease Control. The new CCCEF will enable U.S. DOT to analyze transportation-related environmental trends, to coordinate environmental programs and policies, to share research information with industry and with the public, and, overall, to participate more actively in the nation's efforts to address the long-term challenge of emissions reduction. The Volpe Center will play a major role, conducting research within the CCCEF. In addition, Volpe Center employees, Messrs. Kevin Green, of the Transportation Strategic Planning and Analysis Division, and William Lyons, of the Service Assessment Division, are the Executive Agents for the NSTC Team and are participating in the Climate Change Task Force that is developing the CCCEF's vision, mission statement, and operating plan.



**Volpe to play major role
in new DOT Center for
Climate Change**

Director's Corner

Innovations in technologies useful for monitoring, maintenance, and rapid renewal of physical infrastructure could save governments and the private sector millions of dollars annually. But these savings are realized only when the innovations are put to use, and the market penetration rate for innovations in transportation technologies is agonizingly slow. These represent several of the salient findings from the recently released *Surface Transportation Research and Technology Assessment*, prepared for the National Science and Technology Council by the Volpe Center.

In the U.S., the physical infrastructure for transportation – roads, bridges, railroad tracks, transit systems, airport runways and towers, and port facilities - often lasts for fifty years or more, before the structure must be completely rebuilt or replaced. Thus the technologies used in constructing the facility, track, or roadway - materials, sensing, control, or other devices embedded in the structures - are made obsolete by the availability of more capable and robust materials and technologies, long before the structure is modernized.

In addition, because replacement or reconstruction of large physical structures is costly, especially because of the need to provide alternate ways to move traffic during construction, both public and private owners are hesitant to use any new technologies that have not been thoroughly tested and proven. Consequently, thirty to fifty years often pass before an innovation finds its way into widespread use for transportation infrastructure. And innovators and manufacturers do not have the patience, or capital, to wait that long for a return on their investment in technology development.

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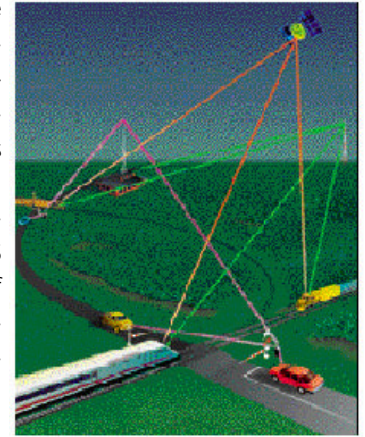
Safety

Promote public health and safety by working toward the elimination of transportation-related deaths, injuries, and property damage.



Volpe Center Hosts Workshop on Rail Grade Crossing Safety (FRA)

The Volpe Center's Accident Prevention Division provides ongoing Grade Crossing Safety Research for the Federal Railroad Administration (FRA). In support of this work, the Volpe Center hosted the Intelligent Transportation Systems (ITS) Highway-Rail Intersection (HRI) Assessment Workshop to identify promising ITS solutions for improving HRI safety. Key workshop objectives included reviewing the status of current ITS HRI



demonstration projects being conducted in seven different states, obtaining inputs for a comparative evaluation of these projects, determining the conformity of these projects to the ITS National Architecture, and identifying areas of future ITS HRI research. Representatives of each demonstration project attended the workshop, including individuals from railroads, academia, industry, state and local governments, as well as staff from the FRA, the Federal Highway Administration (FHWA), the National Highway Traffic Safety Administration (NHTSA), and the Federal Transit Administration (FTA).

Mobility

Ensure that the transportation system is accessible, integrated and efficient, and offers flexibility of choices.



Paper on Global Supply Chain Presented at SAE Conference (RSPA)

Ms. Bahar Barami, of the Policy and Technology Analysis Division, presented a paper, "Freight Technologies as the Integrators of the Global Supply Chain," at the 11th Annual Society of Automotive Engineers International workshop on Reliability, Maintainability, Supportability, and Logistics, held at the DaimlerChrysler Technology Center in Auburn Hills, MI. The 3-day workshop focused on issues related to logistics and infrastruc-

ture performance. Ms. Barami served as a Logistics track panelist. Her paper examined the extent to which the recent growth in international trade has been driven by advanced global logistics and information technologies. The presentation's underlying theme was that the current logistics paradigm shift to demand-driven forces has had significant implications for transportation R&D and infrastructure investment needs. The presentation also demonstrated that although today's integrated supply chains allow producers to simultaneously reduce costs, improve service, and enhance the market reach of global trading partners, the process poses considerable challenges for the nation's transportation infrastructure. Ms. Barami's presentation is part of her work as the National Science and Technology's Executive Agent for the Enhanced Freight Movement at Gateways Private-Public Partnership.

Volpe Presents at Air Transport Conference (FAA)

Dr. Judith Bürki-Cohen, of the Operator Performance and Safety Analysis Division, presented an overview of the Realistic Radio Communications Simulation Project at the Qualification Program/Air Transport Association Conference in Honolulu, HI. The purpose of the study, sponsored by the Federal Aviation Administration (FAA), is to determine the requirements for realistic communications during pilot training and evaluation in the flight simulators. Dr. Bürki-Cohen presented a project overview to the Instructor/Evaluator Focus Group and administered an industry practices questionnaire to the conference participants. On another occasion, Dr. Bürki-Cohen presented an overview of the Volpe Center's Flight Simulator Fidelity Requirements Study for the FAA at the American Institute of Aeronautics and Astronautics Simulation Facilities Working Group and Modeling and Simulation Technical Committee meeting, at the Ames Research Center, Moffett Field, CA.

Volpe Participates in the Air Traffic Control Association's International Technical Conference (FAA)

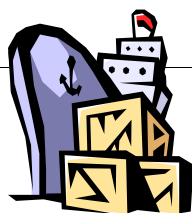
Dr. Kim Cardosi, of the Operations Performance and Safety Analysis Division, gave a presentation entitled "Human Factors of Information Technology" at the Air Traffic Control Association's International Technical Conference in Vienna, Austria. The presentation focused on human factors guidance for information presentation decisions, and was based on work sponsored by the FAA. Dr. Cardosi, and several other Volpe Center employees who attended, familiarized themselves with the European approach to a National Airspace System architecture as part of the recently completed draft Flight 21 Functional Specification, which will serve as the guide for the implementation of new capabilities towards the realization of the FAA's Free Flight concept.

Volpe Center Develops High-Speed Track Safety Standards (FRA)

As part of ongoing Volpe Center support for the FRA's High-Speed Track Safety Standards, which were published in September 1998, Dr. Herbert Weinstock, Chief of the Structures and Dynamics Division, gave a presentation on Vehicle-Track Interaction to the American Railway Engineering and Maintenance-of-Way Association (AREMA) Committee 5. This Committee is responsible for the AREMA standards related to track geometry design, with special interest in research related to rates of run-off and transitions in spirals as well as vertical and horizontal curves. Dr. Weinstock's presentation, "Development of Track Geometry Standards for Train Speeds above 110 MPH," described the analytic studies and simulations conducted by the Volpe Center to support the development of the standards and the methodology used to establish the limits for track geometry variations.

Economic Growth & Trade

Advance America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation.



Volpe Develops Forum on Remote Sensing Applications (RSPA)

Dr. Aviva Brecher, of the Transportation Strategic Planning and Analysis Division, worked closely with the Research and Special Programs Administration (RSPA), the Secretary of Transportation's Office of Policy, and a multi-modal team to prepare the agenda, identify prominent speakers and invitees, and write the background paper for the recent National Forum on Remote Sensing Applications for Transportation, held at the National Aeronautics and Space Administration's (NASA) Auditorium in Washington, DC. The forum, which was co-sponsored by U.S. DOT and NASA, identified the benefits and requirements for remote sensing technologies in transportation, and laid the

groundwork for the development of a national policy as required by the Transportation Equity Act for the 21st Century (TEA-21), section 5113. About 250 people attended the event, representing a variety of transportation and remote sensing stakeholders. Dr. Brecher's background paper, sent to all conference invitees, provided the context for policy development on remote sensing applications to transportation, as well as the transportation needs and requirements for value-added data products of space imagery.

Center Shares Its Unique Business Structure with DOE

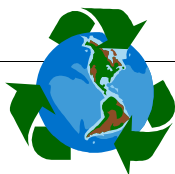
Mr. Philip Coonley, Director of the Office of Administrative Services, hosted a meeting for representatives from the Department of Energy's (DOE) Federal Energy Technology Center. The Technology Center is considering a transition to a "fee-for-service" business structure similar to the Volpe Center's, and the DOE representatives were interested in evaluating the Volpe Center model. Mr. Hans Scott, Budget Branch Chief, presented an overview of the Volpe Center's financial system. Other presenters included Mr. Dave Scali, Chief of the Acquisition Division, and Ms. Elisabeth Gordon, Chief of the Human Resources Management Division.

Presentation at the North American Transportation Statistics Data Interchange Meeting (BTS)

Mr. Michael Rossetti, of the Transportation Strategic Planning and Analysis Division, gave a presentation, "The State of Transportation Safety Data in the United States," at the fourteenth meeting of the North American Transportation Statistics Data Interchange at the National Academy of Sciences in Washington, DC. Mr. Rossetti's presentation, based on work sponsored by the Bureau of Transportation Statistics (BTS), provided an overview of U.S. DOT safety data institutions and programs as well as an analysis of current and long-term trends in safety statistics. As a follow-up, Mr. Rossetti proposed the creation of trilateral working groups on Vehicle Miles Traveled data and the development of indicators for transportation safety. Mr. Rossetti is a member of the U.S. delegation, which includes staff from other U.S. DOT agencies (Bureau of Transportation Statistics, FRA, and Maritime Administration), the Army Corps of Engineers, the Bureau of Labor Statistics, and the Census Bureau. The Mexican delegation included members of the Ministry of Transportation and Communication and Mexico's National Statistics, Geography, & Informatics Institute (NEGI); Statistics Canada and Transport Canada comprised the Canadian delegation.

Human and Natural Environment

Protect and enhance communities and the natural environment affected by



Volpe Staff Represents DOT at Climate Change Convention

Mr. Kevin Green, of the Transportation Strategic Planning and Analysis Office, traveled to Bonn, Germany to represent U.S. DOT at the 10th meeting of the subsidiary bodies to the United Nations Framework Convention on Climate Change. The Framework Convention is the centerpiece of worldwide efforts to combat global warming. Adopted in 1992 at the Rio Earth Summit, its ultimate objective is the "stabilization of greenhouse gas concentrations in the atmosphere at a

level that would prevent dangerous anthropogenic (man-made) interference with the climate system." Of special importance to the transportation sector at the Framework Convention meeting were negotiations related to the reduction of emissions from fuel burned in ships and aircraft used for international transportation.

Volpe Participates in the Aviation/Transportation Expo at Logan Airport

The Volpe Center hosted a display of the Panama Canal vessel tracking and pilot navigation system, developed by Volpe's Center for Navigation, at the annual Aviation/Transportation Exposition, held at Boston's Logan Airport. The Exposition, part of National Transportation Week, is a public-private partnership designed to introduce students to the wide variety of career opportunities available in the aviation and transportation industries. Representatives from private industry and government (in particular, other U.S. DOT modal administrations), spoke to students about career options, education, and aviation in general. Volpe representatives were on hand to explain their navigation system, currently in use at the Panama Canal, which uses ITS technology to improve the efficiency and safety of Canal maritime operations.

Center Recognized for Contributions to Local Community

Dr. Richard John, Director of the Volpe Center, accepted a Corporate Team Award for the Volpe Center at the annual Cambridge School Volunteers Appreciation Day ceremony at the Harvard Faculty Club in Cambridge, MA. The Appreciation Day ceremony recognized the contributions of volunteers in the Cambridge public school system. The Volpe TEAM (Tutoring, Education, and Mentoring) Effort has provided volunteer teachers and mentors to assist elementary and high school students in the Cambridge area. Ms. Audrey Melick, Executive Director of the Cambridge School Volunteers, noted that this is the seventh year of the Volpe TEAM Effort, and highlighted the success of Volpe's new initiative, the Lunch Buddies program. In addition, Volpe Center employees Messrs. John Hopkins, Richard Chutter, and Peter Osgood received certificates recognizing the assistance they provided to students of Cambridge Rindge and Latin in preparation for the 1999 Massachusetts Science Olympiad. The Cambridge Rindge and Latin team won the state competition and was invited to participate in the National Science Olympiad.

Grand Canyon Report Forwarded to Congress (FHWA/FTA)

FTA and FHWA Administrators transmitted to Congress a report, *Grand Canyon National Park: Assessment Report*, written by Ms. Melissa Laube with the help of Mr. Robert Waksman, both of the Service Assessment Division. The report, sponsored by the FHWA's Federal Lands Highway Office and the FTA, is a review of the multi-year transportation planning process conducted by the National Park Service (NPS) for the Grand Canyon, which included a proposal for a light-rail transit system. NPS and U.S. DOT have been working together to improve transportation services in the Grand Canyon National Park in order to alleviate the congestion and environmental problems resulting from year-on-year increases in the number of visitors. A Memorandum of Understanding between the Secretary of the Interior (on behalf of NPS) and DOT was signed last year, providing more opportunities for similar projects in other National Parks.



National Security



Advance the nation's vital security interests by ensuring that the transportation system is secure and available for defense mobility and that our borders are safe from illegal intrusion.

Strategic Nuclear Delivery of Missiles (DOD)

The Strategic Arms Reduction Treaties I and II charge the Department of Defense (DOD) with ensuring the safe transportation of missile fuel and related hazardous materials in the former Soviet Union. In support of this effort, Mr. Ross Gill, of the Advanced Vehicle Technologies Division, is assisting the DOD Threat Reduction Agency with certification of trackage and railway equipment to transport missiles destined for storage or dismantling. Mr. Gill recently traveled to Moscow, Zlatoust, Severodvinsk, and Biysk in Russia to inspect and evaluate specific rail systems linked to the military facilities involved in the dismantling of the SS N 20 Solid Fuel.

Volpe Staffer Receives Appreciation Award (FAA)

Dr. John Hobbs, of the Safety and Environmental Technology Division, a nationally recognized expert in the field of explosives detection, recently chaired a Working Group meeting of the Sub-Committee on Controlled Access Security Search and Screening Equipment of the American Society for Testing of Materials in Seattle, WA. At that meeting, Dr. Hobbs received an Award of Appreciation in recognition for his "many years of outstanding service and active participation in the work of the Committee and his efforts and accomplishments." Membership of the Committee includes representatives from government agencies, National Laboratories, academia, and industry. Dr. Hobbs's research is part of the Volpe Center's ongoing FAA-sponsored research — studying techniques for detecting explosives and flammable liquids concealed on airline passengers or their baggage. Although at present commercial vapor detection systems are available (satisfying the FAA's operational requirements for the detection of weapons on passengers by metal detectors and for the inspection of baggage by various types of radiation), detection systems for explosives and flammable liquids concealed on a person are yet to be developed.

Director's Corner Continued...

The emphasis in the NSTC assessment on the potential contributions of new technologies and the difficulties of helping transportation innovations achieve broad market penetration, reinforces the importance and timeliness of the June 24 and 25, 1999, Conference at the Volpe Center, "The Spirit of Innovation in Transportation." Speakers at the Conference are all experts in different aspects of technology innovation and will doubtless shed light on the difficult area of how to foster innovation in the complex transportation marketplace. Please join me in welcoming those attending. Take advantage of the opportunity to learn from them.